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| 10/575,330 | 02/26/2008 | Barry Messer | 100325.0233US | 3621 |
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| FISH & ASSOCIATES, PC ROBERT D. FISH 2603 Main Street Suite 1000 Irvine, CA 92614-6232 | | | EXAMINER STEIN, MICHELLE | |
| | | | ART UNIT 1771 | PAPER NUMBER |
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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| | | | |
|------------------------------|--------------------------------------|--------------------------------------|--|
| Office Action Summary | Application No. 10/575,330 | Applicant(s) MESSER ET AL. | |
| | Examiner Michelle L. Stein | Art Unit 1771 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 December 2010.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 and 3-34 is/are pending in the application.
- 4a) Of the above claim(s) 10-17 and 34 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 26-31 is/are allowed.
- 6) ☒ Claim(s) 1-9, 18-25, 32 and 33 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 08 December 2010 has been entered.

Response to Amendment

2. Examiner acknowledges Applicant's response containing remarks.
3. Claims 1 and 3-34 are pending, with claims 10-17 and 34 withdrawn.
4. The previous rejection of claim 26 under 35 USC 112, first paragraph is withdrawn. Additionally, the previous art rejections of claims 26-31 are withdrawn.
5. The previous rejections of claims 1-9, 18-25 and 32-33 are maintained. The rejections follow.

Claim Rejections - 35 USC § 102/ 35 USC § 103

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

Art Unit: 1771

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-9 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Petersen (US 5,182,013).

4. For the purposes of examination, Claims 1- 9 are being treated as a composition.

5. Regarding claims 1-2, 5 and 9, Petersen teaches a process of reducing naphthenic acid corrosivity by blending oil that has a higher fraction of naphthenic acid content with oil that has a lower fraction of naphthenic acid content (column 1, lines 25-26). It is noted that "alpha" and "beta" have been interpreted to mean two different fractions of differing naphthenic acid content. Examiner notes that, "Though understanding the claim language may be aided by explanations contained in the written description, it is important not to import into a claim limitations that are not part of the claim. For example, a particular embodiment appearing in the written description may not be read into a claim when the claim language is broader than the embodiment." *Superguide Corp. v. DirecTV Enterprises, Inc.*, 358 F.3d 870, 875, 69 USPQ2d 1865, 1868 (Fed. Cir. 2004)."

6. It is expected that the Petersen process would result in the same composition as claimed because the Petersen process blends together an alpha and beta fraction of naphthenic acids in a fashion which is effective to reduce the naphthenic acid corrosivity.

Art Unit: 1771

7. Furthermore, it is noted that the patentability of composition claims is determined by the properties of the composition. In this regard, the Petersen composition of reduced total acid number and thus reduced corrosivity is expected to possess the same properties as claimed.

8. Regarding claim 3, Petersen teaches the limitations of claim 1, as discussed above. While Petersen does not explicitly teach the total acid number of each stream, Petersen teaches that the amount of naphthenic acid contributes to the corrosivity of crudes (column 1, lines 17-20). Also, more corrosive crudes possess higher total acid numbers (column 2, lines 26-30). The higher naphthenic acid content crude would have a higher total acid number than the lower naphthenic acid content crude. Therefore, it would have been obvious to the person having ordinary skill in the art to have used the

It is noted that the claims are drawn to one fraction having a total acid number of at least 0.3, and the other fraction having a total acid number of at least 2.0. Examiner notes that both ranges do not recite an upper limit. In this regard, the fraction having a total acid number of at least 0.3 could possess a total acid number of higher than 2.0 (such as 3.0) and the fraction having a total acid number of at least 2.0 could have an acid number of just 2.0. These two fractions would be blended together to result in a combined total acid number lower than that of the first fraction. In this regard, Examiner notes that "[W]hen, as by a recitation of ranges or otherwise, a claim covers several compositions, the claim is 'anticipated' if *one* of them is in the prior art." *Titanium Metals Corp. v. Banner*, 778 F.2d 775, 227 USPQ 773 (Fed. Cir. 1985) (citing *In re Petering*, 301 F.2d 676, 682, 133 USPQ 275, 280 (CCPA 1962)) (emphasis in original) (Claims to

Art Unit: 1771

titanium (Ti) alloy with 0.6-0.9% nickel (Ni) and 0.2-0.4% molybdenum (Mo) were held anticipated by a graph in a Russian article on Ti-Mo-Ni alloys because the graph contained an actual data point corresponding to a Ti alloy containing 0.25% Mo and 0.75% Ni and this composition was within the claimed range of compositions.).

9. Regarding claim 7, Petersen does not explicitly teach the total acid number of the resulting product. However, since Petersen teaches a general reduction of corrosivity, as discussed above, the person having ordinary skill in the art would readily recognize that the resulting Petersen process would be able to produce a composition with a total acid number of at least 2.5. It is noted that while according to Petersen a total acid number of at least 2.5 would be a corrosive compound, it would still be less corrosive than a starting compound having a total acid number of greater than 2.5.

10. Regarding claim 8, Petersen does not explicitly teach the mole percent of naphthenic acid or the average molecular weight. However, in this regard, the Petersen process does reduce the naphthenic acid content. Additionally, it is well known that naphthenic acids generally have molecular weights between 200-700.

11. Thus, Examiner holds that the Petersen process, would result in the same product as in claims 1-3, 5 and 7-9.

12. In this regard, it is noted that "[T]he PTO can require an applicant to prove that the prior art products do not necessarily or inherently possess the characteristics of his [or her] claimed product. Whether the rejection is based on inherency' under 35 U.S.C. 102, on prima facie obviousness' under 35 U.S.C. 103, jointly or alternatively, the burden of proof is the same...[footnote omitted]." The burden of proof is similar to that

Art Unit: 1771

required with respect to product-by-process claims. In re Fitzgerald, 619 F.2d 67, 70, 205 USPQ 594, 596 (CC PA 1980) (quoting In re Best, 562 F.2d 1252, 1255, 195 USPQ 430, 433-34 (CCPA 1977)).

13. Regarding claims 4 and 6, Petersen teaches the limitations of claims 1 and 5, as discussed above.

14. Petersen does not explicitly teach obtaining one of the naphthenic acid containing oil streams is prepared from a refinery crude using thermal hydroprocessing.

15. However, it is noted that these claims are product-by-process claims. The Petersen reference teaches process steps which would result in the same product, as discussed with respect to claims 1-3, 5 and 7-9 above.

16. In this regard, it is noted that “[E]ven though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process.” In re Thorpe, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985) (citations omitted).

17. Thus, Examiner holds claims 4 and 6 unpatentable in view of Petersen.

Claim Rejections - 35 USC § 102

18. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

Art Unit: 1771

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

19. Claims 18-21 and 32-33 are rejected under 35 U.S.C. 102(b) as being anticipated by Petersen (US 5,182,013).

20. Regarding claims 18-21 Petersen teaches that naphthenic acid constituents in crude oils cause severe corrosion problems in petroleum refining operations (column 1, lines 13-15). One way to reduce the naphthenic acid corrosion is to blend oil that has a higher fraction of naphthenic acid content with oil that has a lower fraction of naphthenic acid content (column 1, lines 25-26). It is noted that “alpha” and “beta” have been interpreted to mean two different fractions of differing naphthenic acid content.

Examiner notes that, "Though understanding the claim language may be aided by explanations contained in the written description, it is important not to import into a claim limitations that are not part of the claim. For example, a particular embodiment appearing in the written description may not be read into a claim when the claim language is broader than the embodiment." *Superguide Corp. v. DirecTV Enterprises, Inc.*, 358 F.3d 870, 875, 69 USPQ2d 1865, 1868 (Fed. Cir. 2004)."

21. Regarding claims 32 and 33, Petersen teaches that the higher fraction of naphthenic acid content oil is more corrosive, and should be blended with the lower fraction of naphthenic acid content oil which is less corrosive, in order to reduce the corrosivity of the oil (column 1, lines 13-26).

Art Unit: 1771

Claim Rejections - 35 USC § 103

22. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

23. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

24. Claims 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over Petersen (US 5,182,013).

25. Regarding claim 22, Petersen teaches the limitations of claim 20, as discussed above.

26. Petersen does not explicitly teach the specific source of the crude oil.

27. However, it would have been obvious to the person having ordinary skill in the art to acquire a refinery feedstock with a certain naphthenic acid corrosivity from Athabasca oil sand crudes, since this is a well known source of oil sand.

28. Claims 23-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kaufman (US 1,986,775) in further view of Petersen (US 5,182,013) .

Art Unit: 1771

29. Regarding claims 23-25, Kaufman teaches distilling crudes to produce a lubricating oil fraction containing a substantial fraction of naphthenic acids, and then subjecting to further vacuum distillation to produce lubricating oils substantially free from naphthenic acids and a residual fraction containing organic acid in the form a of non-volatile salts (column 1, lines 40-48).

30. Kaufman does not explicitly teach combining the lubricating oil substantially free from naphthenic acid (extremely low fraction of naphthenic acid content oil) with the original feedstock.

31. However, in the analogous art of reducing naphthenic acid corrosion, Petersen teaches that one way to reduce the naphthenic acid corrosion is to blend oil that has a higher fraction of naphthenic acid content with oil that has a lower fraction of naphthenic acid content (column 1, lines 25-26).

32. Therefore, the person having ordinary skill in the art would have been motivated to have blended the Kaufman lubricating oil substantially free from naphthenic acid with the original crude fraction (having a higher fraction of naphthenic acid content), for the benefit of reducing the corrosivity of the crude.

33. Additionally, the person having ordinary skill in the art would readily recognize that this modification would be appropriately carried out through using a recycle loop to blend the lubricating oil with the crude.

Allowable Subject Matter

34. Claims 26-31 are allowed.

Art Unit: 1771

35. The following is a statement of reasons for the indication of allowable subject matter:

36. Regarding claims 26-28, Petersen teaches that one way to reduce the naphthenic acid corrosion is to blend oil that has a higher fraction of naphthenic acid content with oil that has a lower fraction of naphthenic acid content (column 1, lines 25-26). This is opposite of the claimed subject matter, which pertains to increasing the total acid number to reduce the corrosivity.

37. Regarding claims 29-31, Petersen does not explicitly teach processing a hydrocarbon feed to increase the ratio of beta naphthenic acids to alpha naphthenic acids.

Response to Arguments

38. Applicant's arguments filed 08 December 2010 have been fully considered but they are not persuasive.

39. Examiner considers Applicant's arguments to be:

- I. Examiner has not considered the clear definition of the alpha and beta fractions provided in the specification.

6. Regarding Applicant's first argument, it is noted that ****>Although<** claims of issued patents are interpreted in light of the specification, prosecution history, prior art and other claims, this is not the mode of claim interpretation to be applied during examination. During examination, the claims must be interpreted as broadly as their terms reasonably allow. *In re American Academy of Science Tech Center*, 367 F.3d 1359, 1369, 70 USPQ2d 1827, 1834 (Fed. Cir. 2004) (The USPTO uses a different

Art Unit: 1771

standard for construing claims than that used by district courts; during examination the USPTO must give claims their broadest reasonable interpretation >in light of the specification<.). Additionally, "Though understanding the claim language may be aided by explanations contained in the written description, it is important not to import into a claim limitations that are not part of the claim. For example, a particular embodiment appearing in the written description may not be read into a claim when the claim language is broader than the embodiment." *Superguide Corp. v. DirecTV Enterprises, Inc.*, 358 F.3d 870, 875, 69 USPQ2d 1865, 1868 (Fed. Cir. 2004). Since the person having ordinary skill in the art would not readily recognize "alpha" and "beta" to include the limitations described in the specification, they must be given the broadest reasonable interpretation. Applicant has not provided language in the claims to clearly distinguish the invention from the prior art of record. Furthermore, Examiner notes that the alpha and beta fractions listed in the specification possess overlap (molecular weights from 325-425, solubility in aqueous of 0.1-0.3, true boiling point 675-725).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michelle L. Stein whose telephone number is (571)270-1680. The examiner can normally be reached on Monday-Friday 8:30AM-5PM EST, Alt Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola can be reached on (571)272-1444. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1771

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Michelle L. Stein/
Examiner, Art Unit 1771

/Glenn A Caldarola/
Supervisory Patent Examiner, Art
Unit 1771